THE PAST, PRESENT, AND FUTURE OF ACCOUNTING:
ARE WE HEADED IN THE RIGHT DIRECTION?

by

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Abstract

This study outlines the accounting profession and its progression throughout history in terms of methods, technology, fraud, and fraud prevention. The chapters are broken into early history, twentieth century, and twenty first century. The results show that, even though fraudulent activity has increased, all positive areas such as prevention technology, methods, and regulation have also increased to accommodate these mishaps and provide a better business environment.
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Chapter 1

Introduction

This study analyzes the direction of the accounting profession throughout history up until current events. One of the goals of this study is to appeal to students and all people of all different areas of study, not just accounting majors and professional accountants. The purpose of this study is to raise awareness of all the positive elements of the accounting profession and shed honest light on the negative aspects. The accounting profession has been often been portrayed negatively in the media due to exceptionally massive corporate scandals. However, the media does not often show the progress the accounting profession is making in general and also towards preventing and deterring these frauds as well. Shedding light on these important aspects is another goal of this study.

The next chapter, chapter two, discusses how different areas of early accounting developed. It was essential to include historical and geographical information pertaining to the development of accounting as a whole. Areas of accounting that are discussed are standard methods, cost accounting, auditing, and fraud. Early figures such as Pacioli and da Vinci are also discussed alongside their contributions to the accounting profession that still echo in business, technology, and mathematics today. Technology is also discussed a great deal as the invention of calculators and their many different variants and successors were vital to the progression of the accounting field.
The following chapter, chapter three, outlines the impact and progression of accounting in the twentieth century. The CPA exam is briefly discussed. Specific types of fraud, such as ponzi and pyramid schemes, are revealed and discussed. Subsequently, the Securities and Exchange Commission as well as the Securities Acts of 1933 and 1934 were introduced to address those frauds. In the realm of technology, the first business computer and first accounting software were touched on as the successors for the calculators.

The fourth and final chapter discusses the twenty first century accounting in the business world. Enron, Arthur Andersen, and Sarbanes-Oxley are all included in chapter four. Their impact on accounting regulation and the business world is discussed. The new and exciting field of Forensic Accounting is elaborated on. Benford’s Law is also used to explain certain aspects of Fraud Prevention. Since this chapter contains much fairly recent information, a lot of sources are newspaper articles, such as The New York Times, as well as fairly recent scholarly journals.
Chapter 2

Early History

During the 15th Century, Europe was exiting the Dark Ages and an era known as the Age of Discovery had started. This era brought about exploration, trade, conquest, and colonization between Europe and the continents of Africa, Asia, and America for many different reasons. (Weis and Tinius) In the area of trade, different systems of recording transactions were used. However, only one was prominent enough to still be used today. This system, which is believed to be the first written work of Accounting, was produced in the 15th Century by Franciscan friar, Luca Pacioli, now known as the father of accounting. His book is called "Summa de Arithmetica Geometria Proportioni et Proportionalita" or *Everything About Arithmetic, Geometry and Proportion*. Pacioli’s "Summa" was widely read across Italy and was one of the first written works to be published on the Guttenberg Press. (Luca Pacioli: The Father of Accounting). It was the first written work to discuss the double entry accounting method, also known as the Venetian method (Sangster 432). This method was discussed in *Summa* with “such detail and clarity” that it became the standard accounting method since the book was published and remains as the foundation for today’s accounting. (Weis and Tinius) Pacioli’s writings emphasized legality and organization. He recommended procedures that would eliminate the possibility of fraud and keeping records in such a manner that would allow for them to be used in court. The first chapter of his book "would show how
the merchant should keep his accounts and entries in an orderly way ‘so that everything may readily be found in its place’ - for otherwise there will be muddle and confusion, and no peace of mind.” (Yamey 375-376)

**Double Entry Method**

The double entry method is highly regarded throughout history as a great advancement in accounting method. German Economist and Sociologist Werner Sombart stated that the double entry method helps accountants depict assets as “money values which increase or grow less” instead of actual, individual products, which provides a better illustration for business. Sociologist James Aho goes as far as saying that the double entry method proves the “legitimacy” and “ethicality” of businesses whose functions could have been “morally suspect” or “even denounced by Church.” However, the comments were still detailed enough as to be able to identify a product or service, if needed. An entry written in 1512 by a silk merchant was so detailed that it provided enough information for an art historian to identify a painting that had an unknown painter. There have been quite a few instances of historians discovering information through early accounting ledgers. (Yamey 377, 379)

**Pacioli**
Pacioli, himself, was a friar with a passion for math and science that stemmed from his youth. At the age of sixteen, he decided to pursue a scholarly path involving mathematical and scientific theory. It is important to note that Pacioli works were written in Italian. Even though most scholarly work at the time was published in Latin, Italian publications meant that it was more practical to native common people and not just the educated. Pacioli emphasized practicality in his teachings. Pacioli "stressed the importance of putting theory to practical use, applying mathematical principles to business, and explaining ideas in common terms." This was an underlying quality of Pacioli and was one of the reasons why his work was able to reach such a broad audience. (Weis and Tinius)

Cost Accounting

Cost accounting has also played a significant role throughout history. It is assumed that cost accounting started to develop in the late 15th century, during the reign of Henry VII in England. Fed up with restrictions, woolen manufacturers relocated their businesses to the countryside to escape the organized guild monopoly of the city. However, these newly small businesses discovered that in order to succeed and survive, they needed to keep better track of their costs, something that was not necessary when they worked under the regulations of the monopoly. (Garner 385) As time passed, cost accounting became even more necessary. Fairly common complications were: having
too much inventory at one time, payroll fraud/error, depreciation of equipment, cost adjustment for competition or slower seasons, evaluation of costs through monitoring all levels of production. However, early businesses still had the same general purposes as today, such as controlling the steps of productions and reducing waste of materials and labor. (Garner 387)

One story of successful business, specifically involving accounting, comes from the 18th Century. Well-known potter, Josiah Wedgwood, noticed that his business was not operating as efficiently. Faced with a depression, he had to take it upon himself to save his business. He examined the records and found that his clerks were stealing money from him. Upon hiring a new clerk, they corrected inaccuracies and incorporated overhead costs and weekly reviews of their records. As businesses and laws became more complex, the need for professional accountants became apparent. In 1845, the first accounting firm opened in London. (How Technology Has Impacted Accounting)

**Standard Methods**

Before computers became widespread, accounting was virtually all on paper. This would be done by a “bookkeeper” and was commonly known as bookkeeping.” Recording financial information would be done on a “General Journal” at first. This written record would be divided into columns. Each column contained an account that was used frequently and one column at the end would serve as a record for all the
remaining accounts. Critical details such as amount, date, and comments were also recorded. At the end of the period, the totals were calculated. It was absolutely vital to make certain that all of the accounts zeroed out. This means that the total debits equaled the total credits in the account. If they did not, then the accounts must be reviewed and calculated again until the error is discovered. Even an error of a few cents was not to be overlooked because it was possible that those few cents could be the difference of multiple large errors. The bookkeeper would use a Trial Balance to balance the debits and credits. (Averkamp) The correct totals would then be written into a “General Ledger” and used to create Balance Sheets and Earning Statements. As the business grows, more journals are needed. Therefore, different journals were used for customers, employees, vendors, etc. Once these journals are zeroed out at the end of the period they can be posted to the General Ledger and also to a respective ledger of its own for more detailed records. (Zimmer)

Audit

Auditing, as defined by Columbia Electronic Encyclopedia, is the “examination and statement of accounts and of other documents connected with accounts by persons who have had no part in their preparation.” Auditor comes from the Latin word for “to hear” because auditors confirmed the validity of oral reports. The first known auditors were the spies of King Darius of ancient Persia. They would monitor the local Persian
governors’ actions. As the centuries went by, the auditors’ role evolved from oral reports to verifying written documents. An important principle of auditing is Auditor Independence. Basically, an auditor should not have any bias toward the client. Bias, or even suspicion of bias, could greatly affect the validity of the audit. (Columbia Electronic Encyclopedia and McGraw Hill 1)

Technology

As accounting itself grew, the relevant technologies followed suit. A machine that could perform mathematical functions was needed. Wilhelm Schickard, a German scholar, was the first to design a device to calculate arithmetic tasks. It was at the request of astronomer Johann Kepler. Schickard built the machine for Kepler but it was destroyed in a fire before it was ever put to use. (CALCULATING MACHINES) Leonardo da Vinci also created a concept of a primitive version of a calculator which he called the “Codex Madrid.” This machine could theoretically be used to perform basic mathematical functions through its thirteen wheels (How Technology Has Impacted Accounting). Its design sketches were thought to be lost. They were found after da Vinci’s death. Although the concepts involved were correct, the machine could not function efficiently if it were to be produced due to friction between the shafts and wheels. (Remoortel)
It wasn’t until 1642 that the first functioning calculator was created. Blaise Pascal, also credited for his accomplishments in mathematical theory and fluid power, invented the first mechanical calculator when he was a teenager. Although being a technological breakthrough, Pascal’s calculator, also known as the “Pascaline,” did not sell very well. Pascal was able to operate it and use it to perform addition and subtraction tasks to his liking. However, most people could not use the complicated device successfully as Pascal could. (Karwatka)

Following the path set by Pascal, the Step Reckoner was invented in 1673 by Gottfried Wilhelm von Leibniz. This early calculator model could add and subtract just like the Pascaline. (Freiburger) It could also multiply, divide, and calculate square roots, which was something its predecessors could not. (Maxfield) The first commercially successful calculator model was the Arithmometer, invented in 1820. This large device could perform the all of the tasks that the Step Reckoner could, but was easier to use and reasonably affordable. (Palladino) It was popular during the Industrial Revolution and continued to sell for 90 years. (Freiberger)

Another successful early calculator was the Comptometer. This was the first device to have keys that users would press to perform tasks, much like the calculators of today. Its mechanical register made adding and subtracting much less time consuming. These improvements set the pace for other improvements such as printing for keeping track of computations, electric motors for greater efficiency, and smaller size for greater
portability. As the technology grew, the calculators shrunk in size. In 1943, Curt Herzstark invented the world’s smallest mechanical calculator. This pocket-sized device, known as the “Curta,” was very successful commercially up until the 1970s. At that point, electronic calculators had surpassed mechanical ones in virtually all aspects and the majority of buyers and vendors transitioned from mechanical to electronic.

(CALCULATING MACHINES)

**Fraud**

Webster’s New World Finance and Investment dictionary defines accounting fraud as “Knowingly falsifying accounting records, such as sales or cost records, in order to boost net income or sales figures. Accounting fraud is illegal and subjects the company and the executives involved to civil lawsuits. Company officials may resort to accounting fraud to reverse a loss or to ensure that they meet Wall Street’s earnings expectations.” (Webster’s New World Finance and Investment Dictionary)

A great deal of pressure is put on the accountants from managers and investors to produce positive financial statements in order to make the organization appear profitable. This can be done in a number of fraudulent ways. Using accounts receivable, imaginary customers can be added to the books as paying “on account” to exaggerate sales. Also, managers may utilize a fraudulent method called “keeping the books open.” This method involves exaggerating revenue at the end of the period by adding sales
from the next period. In other words, once the period is over, the books are “kept open” through to the next period, adding more sales values to the total revenue of the previous period. Just as there may be motive to increase receivables, there is also motive to decrease accounts payable. Doing so will result in showing a higher net income.

(Association of Certified Fraud Examiners)

Another method for fraud would be to consider deferred revenue as earned revenue, recognizing revenue before it is realized. Also, expenses may be lowered by reporting them as prepaid expenses. This makes the specific expense appear as an asset. Understating depreciation and overstating inventory can also be used fraudulently to make the financial records appear more favorable. (Elmaleh)

The “South Sea Bubble” was one of the first, if not the first, cases of corporate fraud. In 1711, the South Sea Company was formed and had exclusive trading rights to South America. They assumed ten million pounds in bonds from the British government and were not very profitable. They produced a scheme in 1719 to take on all thirty million pounds of Britain’s national debt using its own stock at five percent in exchange for bonds lasting until 1727. The stock price inflated and then dropped. The drop started when directors began selling to reap in the profits. Investors became angry and, for the first time, an external auditor, Charles Snell, was hired to review the company’s records. That event was the first external audit recorded and the beginning of Certified Public Accountants. (Singleton and Singleton 4)
Chapter 3

CPA Exam

The 20th Century was filled with many important milestones and major events for the Accounting profession. The prospect of a uniform CPA exam was first suggested in 1917 by John J. Forbes of the AICPA, which was the national governing body of CPAs. At first, the exam first appeared in Kansas, Oregon, and New Hampshire only. Eventually, by 1952, the uniform CPA exam was available in all states. (Dennis)

Ponzi Scheme

In 1920, Charles Ponzi produced a scheme to buy postal coupons from Spain and sell them to the U.S. Postal Service. He was able to profit from the difference in exchange rates. He promised investors a fifty percent return on their investment in just 90 days. He paid early investors by using the new investor’s payments. Eventually, without enough legitimate earnings, his plan collapsed and he was arrested for defrauding fifteen million dollars from forty thousand people. Because of the magnitude of Ponzi’s fraud, all frauds of this nature are referred to as “Ponzi Schemes.” Ponzi Schemes are characterized by alleged promises of high returns with little risk. Another
common characteristic of a Ponzi scheme is paying off early investors and personal expenses instead of using the funds for legitimate investment activity. (U.S. Securities and Exchange Commission, Singleton, and Singleton 5)

**Securities Acts**

Before 1929, The United States had a *laissez-faire* approach the regulation of trading corporate shares. In other words, their policy was of noninterference. (Collins English Dictionary) This all changed, however, after the Stock Market Crash of 1929, which caused the Great Depression. Faced with economic downturn and the public’s lack of confidence in the markets, Congress decided to pass the Securities Act of 1933 and the Securities Exchange Act of 1934. These laws required companies and traders to be fair and honest in their dealings to protect the interests of the investor. Subsequently, Congress also appointed the Securities and Exchange Commission to oversee the new laws. The SEC also required mandatory external audits for companies listed on stock exchanges. Before this change, external audits were voluntary and companies only utilized them to convey their integrity to the public. (Jensen and U.S. Securities and Exchange Commission)

**Kreuger and Toll**

Another factor that gave political support to the Securities Acts of 1933 and 1934 as well as the requirement for mandatory external audits was the Kreuger and Toll fraud
of 1932. It started with Ivar Kreuger, Swedish engineer and owner of multiple match factories. Kreuger developed a scheme to control the match market on a global scale. He offered loans of up to 125 million dollars to countries that needed money after World War I. The countries that accepted had to give Kreuger exclusive rights as the only supplier allowed to sell matches in that country. These countries repaid loans by excise taxes on the matches and the contractual agreement dictated the price of the matches. Kreuger and Toll were the top match providers in twenty four countries, fifteen being total monopolies. He controlled seventy five percent of the match market in all of Europe. Kreuger started selling stocks and bonds to investors in the U.S. to finance the loans to countries that accepted his terms. He promised twenty percent dividends annually to investors. However, he could not keep up with paying out such high dividends and the situation only worsened as countries began defaulting on their loan payments. He began paying dividends from capital and used the proceeds from the loans and bonds to pay original investors. Once the Great Depression hit, banks and investors no longer purchased Kreuger and Toll shares, and the pyramid scheme started to collapse. Before this was all discovered, Ivar Kreuger committed suicide in 1932. However, his motive was unknown until about a month later when auditors reviewed his books and realized what had happened. (Clikeman 2-3)

McKesson and Robbins
Another great fraud of that time was the McKesson and Robbins fraud. This fraud urged the Securities and Exchange Commission to make observing inventory and confirming accounts receivable a mandatory practice. The McKesson and Robbins fraud began with Philip Musica. Musica rose to become a prominent figure in politics and business. However, by age thirty, he had two fraud convictions under his name. The first was from avoiding import tariffs through bribery and the second was from using forged invoices for the purpose of obtaining large bank loans.

Musica had another plan but needed to cover up his tarnished record in order to be able to commence. Therefore, Philip Musica changed his name to Frank D. Costa in 1919. Under this new alias, Costa established the Adelphi Pharmaceutical Manufacturing Company. Adelphi worked in the business of producing alcohol based products such as tonic and make up. However, since this was during the time of prohibition, Adelphi’s main customers were bootleggers who distilled the alcohol and made it safe for drinking. In 1925, Musica fabricated another alias and used Adelphi’s profits from bootleggers to purchase a company known as McKesson and Robbins. Musica, now known as Dr. F. Donald Coster, turned McKesson and Robbins from a company that only sold milk of magnesia and cough syrup, into a legitimate competitor among the national pharmaceutical chains in twelve short years. Musica’s three brothers also assisted in different areas of the fraud. They went by aliases George Bernard, Robert Dietrich, and George Dietrich. George Bernard was the head of phony sales agency,
“W.W. Smith & Co.” Bernard’s duty was to produce and send purchase orders with the names of fake companies to McKesson and Robbins. Robert Dietrich, as head of the McKesson and Robbins shipping department, had the role of fabricating shipping documents to create the illusion that McKesson and Robbins had delivered inventory to their customers. George Dietrich played the role of McKesson and Robbins assistant treasurer. His job was to transfer money between various company bank accounts to create the illusion that customers were purchasing from them and paying them accordingly. The brothers all split the commission from W.W. Smith & Co., paid by McKesson and Robbins.

The Musica brothers’ wrongful prosperity did not last forever. In 1938, Julian Thompson, treasurer of McKesson and Robbins, grew suspicious of the unusually large transactions between McKesson and Robbins and W.W. Smith & Co. Thompson acquired copies of W.W. Smith and Co.’s credit reports. These credit reports served as documents to prove the financial viability and legitimacy of W.W. Smith and Co. to McKesson and Robbins auditors. Thompson took these reports to the credit reporting company that was responsible for them in hopes of seeking more information. However, upon inspecting the reports, the company’s representative not only told Thompson that he had never heard of W.W. Smith & Co., but also that those reports were forged. In December of that same year, The SEC investigated McKesson and Robbins and arrested “F. Donald Coster,” unaware that it was actually Musica. Musica was released on bail. The
following day, the police matched “Coster’s” fingerprints with the two-time fraudster, Musica. Before the investigators could bring him into custody, he committed suicide by means of shooting himself. (Clikeman 3-6)

**Securities and Exchange Commission**

The Securities and Exchange Commission is defined by Encyclopedia Britannica as the:

U.S. regulatory commission established by Congress in 1934 after the Senate Committee on Banking and Currency investigated the New York Stock Exchange’s operations. The commission’s purpose was to restore investor confidence by ending misleading sales practices and stock manipulations that led to the collapse of the stock market in 1929. It prohibited the buying of stock without adequate funds to pay for it, provided for the registration and supervision of securities markets and stockbrokers, established rules for solicitation of proxies, and prevented unfair use of nonpublic information in stock trading. It also stipulated that a company offering securities make full public disclosure of all relevant information. The commission acts as adviser to the court in corporate bankruptcy cases. (Encyclopedia Britannica)
The Securities and Exchange Commission describes its mission as “to protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation.” The SEC lists its responsibilities as:

1) interpreting federal securities laws;
2) issuing new rules and amending existing rules;
3) overseeing the inspection of securities firms, brokers, investment advisers, and ratings agencies;
4) overseeing private regulatory organizations in the securities, accounting, and auditing fields; and
5) coordinating U.S. securities regulation with federal, state, and foreign authorities. (U.S. Securities and Exchange Commission)

**First Business Computer**

In the area of technology, the first computer used for business was the Lyons Electronic Office (LEO), invented in London by J. Lyons & Co. It was first used in 1951 for the purpose of keeping track of transactions and accounts in a timely and efficient manner. Before LEO, using machines in the workplace was not as streamlined. Each machine had its own simple purpose and it was up to the operator to utilize the separate sets of data accordingly. However, LEO demonstrated that one machine could
perform multiple tasks and serve for multiple purposes. (Encyclopedia of Computer Science and Webb)

LEO ran applications that helped businesses perform the time consuming, yet needed tasks that they had to perform on periodic basis. Even Meteorologists took advantage of LEO’s capabilities for weather forcasting. LEO handled Lyons’ own payroll and inventory, as well as for other big companies such as Ford and Kodak. (Encyclopedia of Computer Science, Webb, and Coopey 122-123)

**First Accounting Software**

In 1980, IBM and Bill Gates secretly discussed the conceptual binding of the first personal computer and the Windows operating system. With the first PC release in 1981, the first generally known accounting software was bundled with it. This software was known as, and still is known as, Peachtree. Peachtree is described as being user friendly, whether accountant or average Joe. It utilizes a clear double entry method format and allows businesses to manage their records easily and efficiently. The quality of Peachtree is what allows it to continue to be successful from its release up until the present. (Bayne, Bellis, Gritton Associates, and Dual Entry Accounting)
Chapter 4

Enron

The 21st Century started off with very significant fraud cases. A major one was the Enron scandal. Enron was considered one of the most successful natural gas companies of its time. The multinational energy corporation was formed in Omaha, Nebraska in 1985 by the merging of Houston Natural Gas and InterNorth, Inc. The new company almost immediately moved to Houston with Kenneth Lay, previous CEO of Houston Natural Gas, acting as the new CEO of Enron. When Lay retired in 1990, Jeffrey Skilling replaced him as Enron’s CEO. Enron, at its peak, was worth sixty billion dollars and became the seventh largest company in the United States. Its stock prices rose as large as ninety dollars per share.

Enron was able to acquire government deregulation. This basically meant that they were immune to government interference and that they would not be observed or scrutinized in regards to their commercial or financial activity. With this advantage, they allowed their financial reports to be misrepresented. Losses were not fully disclosed and
Enron was falsely portrayed as a successful and profitable company. Investors wanted to join in on the alleged success because of the misrepresented figures. As the scandal continued, Enron executives also embezzled company funds. They took investors’ money, meant for the company, and used it for personal uses. This helped lead to Enron’s bankruptcy. It is even speculated that, in 2000, Enron fabricated the California energy crisis in order to raise its prices to avoid bankruptcy. Since Enron was a highly respected corporation, its actions were not questioned. In October 2001, Enron’s non-GAAP income was over a billion dollars more than its GAAP (Generally Accepted Accounting Principles) income. Specifically, its non-GAAP net income was 393 million while its GAAP net loss was 644 million. The notes provided in the financial statements did not sufficiently validate this incredible difference. Investors became worried and Enron shares went from eighty five dollars per share to thirty cents per share. (Laws.com, Corporate Narc, ClockWork Accounting)

In 2001, the SEC audited Enron because they failed to provide any evidence for their earnings. They subsequently discovered all the fraudulent activity. As a result of bankruptcy, investors lost over seventy billion dollars and employees lost two billion in misappropriated investments, stock options, pension funds, and savings plans. A number of executive members of the company were prosecuted. (Laws.com)

Arthur Andersen
Another party who was greatly responsible and affected by the Enron scandal was Arthur Andersen, LLP. Arthur Andersen didn’t always have the negative connotation that it does today. The firm (formerly known as The Audit Company) was initially purchased by Arthur Anderson and his partner, Clarence M. DeLany, when the original owner passed away. This new firm was originally called Andersen, DeLany & Co. but was renamed Arthur Andersen & Co. when DeLany left in 1918.

Andersen’s policies included only hiring those with college degrees, which was not prevalent at the time). Also, he believed his employees to be a direct reflection of his firm. He required them to act and dress professionally and to go out during their lunch breaks and eat with others to meet potential clients and advertise the firm to the public. He preferred using common sense while accounting as opposed to accounting theory. He was also very keen on accountants specializing in various fields in order to cater better to clients and understand their functions better. Andersen also had a very strong training program. His program emphasized quality and uniformity. Hence, the employees that were trained there were labeled as “Androids.”

Andersen’s integrity was originally unquestionable, as he refused to certify doubtful accounts, despite pressure from important clients. Arthur Andersen & Co. was even chosen to provide services to the Insull companies after their leader, Sam Insull, fled the country to escape charges of manipulating his company’s stock prices. Since his operation involved borrowing from banks, the banks were in danger of defaulting due
to the declining of the Insull securities. Andersen’s purpose was to review the expenses
and handle the situation in agreement with the banks. This engagement greatly added
to Andersen’s professional reputation. At the age of sixty one, Arthur Andersen passed
away in 1947. He was regarded as one of the most well-known and respected
accountants in the United States.

However, after Andersen’s death, the firm continually found itself in danger. It hit
the pinnacle of its dilemma at the turn of the century. Having just split with its successful
consulting division, Arthur Andersen was the smallest of the Big Five and had increasing
liabilities and business competition. Newly appointed chief executive officer, Joseph
Berardino, organized a meeting to discuss reestablishing the firm in October 2001.
However, at the meeting, Berardino got news of the situation at Enron and the goal
shifted from rebuild to survive. Berardino told the press that Arthur Andersen was not
involved in Enron’s economic viability. He stated that Enron’s problem stemmed from a
failed business model and wrong decisions by management. Despite that testimony, the
firm announced that some its offices had destroyed and deleted documents relating to
Enron. The destruction was under a policy enacted by firm partner, David Duncan. The
policy stated that documents would be deleted subsequent to the retention period
required by the SEC to protect against the documents being utilized by lawyers. Duncan
was fired and the SEC and Congress were informed of the destruction of documents.
Duncan, as well as Arthur Andersen itself, was indicted and a criminal case had opened up.

The accusation brought on against Arthur Andersen led many of their big clients switching to another audit group. At the rate that clients were leaving, it would be impossible for them to continue to do business and would mean the loss of a job for 28,000 Americans. The Justice Department rejected any offers and settlements that were proposed to save the firm such as firing the individuals involved, limiting partner power, limiting bonuses, engaging in no further misconduct. Upon the conclusion of the trial, the jury decided that Duncan did not obstruct justice while working at Arthur Andersen. The reasoning behind this was that he destroying the documents was not illegal, at least until the SEC became involved, and that all the documents had passed the required retention period. Also, it was determined that the files were still backed up and could be available again. The jury then placed the accusation of obstruction of justice on Nance Temple, an Arthur Andersen lawyer. The reasoning behind that was her involvement to the sensitive files and information. Her emails, voicemails, and phone calls were under scrutiny. The jury found her advisement to Duncan to be an obstruction of justice. Because of this conviction, Arthur Andersen was fined $500,000 and put on probation for five years. This, however, was nothing compared to the consequences that resulted. Arthur Andersen lost its CPA licenses and was no longer allowed to audit public companies by order of the SEC. In addition to the 5,000 Enron employees that were out
of work, 85,000 Arthur Andersen employees worldwide, including 28,000 from the United States, were now out of work as well. The conviction was appealed all the way up to the Supreme Court. Surprisingly, the Supreme Court unanimously reversed the decision. They stated that it was not inherently wrong to destroy files. They also made a point that the trial judge was wrong in informing the jury that they could find Arthur Andersen guilty, whether they believe their intentions to be honest and sincere, or not. However, the Supreme Court decision was more than two years after the conviction. The damage done to Arthur Andersen and Enron could not be undone. (M.E. Sharpe)

**Sarbanes-Oxley Act of 2002**

Enron was one of the major scandals that influenced the Sarbanes-Oxley Act of 2002. It also goes by the name of Public Company Accounting Reform and Investor Protection Act. Its intended purpose is “to reinforce investment confidence and protect investors by improving the accuracy and reliability of corporate disclosure. The Act mandated a number of reforms to enhance corporate responsibility, enhance financial disclosures and combat corporate and accounting fraud, and created the ‘Public Company Accounting Oversight Board’, also known as the PCAOB, to oversee the activities of the auditing profession.” (Credo Reference)

The Sarbanes-Oxley Act protects employees from termination, demotion, harassment, or other adverse employment actions for providing information regarding
fraud to their supervisors or the government. The employee may make a complaint to the Occupational Safety and Health Administration if any of the above occurs. Sarbanes-Oxley has been regarded as a success in terms of raising awareness of fraud within corporations. However, another view of Sarbanes-Oxley has been of not accomplishing its objective of having those complaints from employees prevail regularly and in a timely manner. On the other hand, it can also be argued that the Act significantly minimized fraudulent activity. Sarbanes-Oxley continues to be judged with mixed feelings by those affected by it. (Graham)

**Forensic Accounting**

One field that has recently pioneered into the scene of the accounting world is forensic accounting. It is defined as accounting that assists in identifying financial fraud; an accounting practice that specializes in investigating and presenting expert court testimony concerning crimes involving financial matters.” (A&C Black)

The Department of Justice defines cyber crime as “any violations of criminal law that involve knowledge of computer technology for their perpetration, investigation, or prosecution.” (Pearson) Cybercrimes are very common in the modern era and it is important for accountants to utilize knowledge of information technology as well as IT specialists. A technology research firm known as IDC collected data that suggests that the total amount of digital data generated up until 2006 were approximated at 161 exabytes, or 161 billion gigabytes. They also predict that in 2010, the total digital data
generated would almost be one zetabyte, or 100 exabytes. Furthermore, digital storage is progressively getting cheaper and software is constantly evolving. With such a vast spike in digital information, there’s no question that forensic accountants need to be familiarized with modern technologies. There is also a demand for professionals with backgrounds in computer science and engineering with skills in business and accounting. Traditional examining of documents is also being outgrown. Newer, more efficient methods are being used for information management and transactional data analysis. (Hydroski)

When forensic accountants are used in an investigation, his/her ability to research is key. Any information that the accountant can shed light on or bring to the table is significant. Forensic accountants can investigate issues, document findings, and make recommendations. One special software they utilize is called Data Software Mining. This tool detects patterns and relationships within the data to determine fraud. The Data Software Mining tool aids the examiner in understanding the patterns and relationships much more efficiently then without it. Forensic accountants also have public databases on their side. Records of lawsuits, bankruptcies, tax lines, judgments, and property transactions all can be utilized for gathering fraud evidence. Forensic Accountants rely on public databases quite often because of how inexpensive it is and how easy it is to access. In fact, it is common knowledge that ninety five percent of spy work is from public databases and records. The internet is also a useful tool for forensic accountants.
Not just for online databases, but also for breaking news. Companies’ websites on the internet also can contain information that would be vital to an investigation. (Bawaneh)

**Benford’s Law**

An important concept in fraud detection is Benford’s Law. Benford Law is named after General Electric Company physicist Dr. Frank Benford. In 1938, he began to realize that pages of logarithms that started with the number one appeared to be more worn out from frequent use than pages with other starting digits. He conducted a mathematical analysis using oddly random categories such as areas of rivers, baseball statistics, numbers magazine articles, street addresses of people in a certain book. He studied 20,229 sets of numbers in total. He concluded that the number one appeared as the first digit roughly thirty percent of the time, or 30.1 percent to be exact. This percentage was higher than the odds of any other number appearing as the first digit. The probability of two appearing as the first digit is 17.6 percent. The probabilities continue to decrease as the digits become greater, with nine having 4.6 percent. Benford’s Law is also scale invariant. This means that the numbers could be any type of currency and Benford’s Law would still hold true. Also, the larger the sample of values is, the more precise Benford’s Law becomes. Benford's Law can be applied to fraud
detection simply by its concept alone. If sets of numbers appear to grossly not match Benford’s Law, then it is reasonable to be suspicious of fraudulent activity. However, Benford’s Law is not one hundred percent perfect. Firstly, it cannot be applied to uniform sets of numbers, such as a lottery. In this case, the numbers simply serve as labels and are equally distributed. Also, the number twenty four appears frequently in analysis of corporate accounting, not because of fraud, but because of skimming a few pennies. Those who travel on business are required to submit receipts for meals costing twenty five dollars or more. Therefore, many claims for $24.90 are received making the number twenty four appear constantly. (Browne)

**Conclusion**

Throughout the years, new methods and new technology have graced the accounting field. We’ve gone a long way from the written ledger and the abacus. We now have supercomputers that are capable of infinite amounts of calculation and data entry that can be for fraud or fraud prevention. We also have regulation, which may slow down business, but also protect them as well. It’s obvious that we are constantly making progress in preventing fraud. Whenever a new type of fraud appears, a new regulation or a new technology will appear to thwart it. Just as it happens throughout history, new methods will be developed and new technologies will arise to make the accounting profession much more productive and efficient. The future of accounting is limitless.
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